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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,343	11/24/2000	Adam Michael Baumberg	1263.1796	2598

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EXAMINER

CARTER, AARON W

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/718,343

Applicant(s)

BAUMBERG, ADAM MICHAEL

Examiner

Aaron W Carter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20,69-80,87-99,104-144 and 146 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20,69,107-141 and 144 is/are allowed.
- 6) ☒ Claim(s) 70,78-80,87,96-99,104-106,142,143 and 146 is/are rejected.
- 7) ☒ Claim(s) 71-77 and 88-95 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to papers filed on September 13, 2004.

Response to Amendment

2. In response to applicant's amendment received on September 13, 2004, all requested changes to the specification and claims have been entered.

Response to Arguments

3. Applicant's arguments filed September 13, 2004, with respect to 35 USC 101 rejection of claim 143 have been fully considered but they are not persuasive.

Applicants argue that a signal is indeed physical. However, as reaffirmed by the 101 Help Panel, the claim provides no limitation describing a physical embodiment of the signal and in order for the functionality of a "signal conveying processor implementable instructions", it must be tangibly embodied on a "computer readable medium".

4. Applicant's arguments with respect to claims 70, 78-80, 87, 96, 99, 104-106, 142 and 146 have been considered but are moot in view of the new ground(s) of rejection.

Examiner Note

5. As to claims 9, 17, 80, 96, 99, 121, 133, 136, 139 and 140, it is unclear whether these claims are intended to be in dependent or independent form. Please clarify.

Claim Objections

6. Claims 70 and 87 are objected to because of the following informalities:

As to claim 70 and 87, in lines 6 and 5, respectively the word "characterising" appears to be spelled incorrect.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 143 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

8. As to claim 143, the invention discloses non-functional descriptive material; please refer to the phrase on line 1 stating, "A signal conveying processor implementable instructions". A signal, per se, which is nothing more than an abstract idea, in order for the functionality of a data signal to be realized, it must be tangibly embodied on a "computer readable medium".

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 70, 78-80, 87, 96-99, 104-106, 142 and 146 are rejected under 35 U.S.C. 103(a) as being unpatentable over “A Fast Matching Method for Color Uncalibrated Images using Differential Invariants” by Gouet et al. (“Gouet”) in view of USPN 6,266,452 to McGuire.

As to claims 70, 87 and 146, Gouet discloses an apparatus for generating characterization data characterizing an image comprising:

A data receiver for receiving image data representative of an image (page 368, section 1, paragraph 1, lines 1-3, wherein the computing of synthetic images corresponds to receiving data representative of an image);

A feature detector for detecting a plurality of features in an image represented by image data received by said data receiver (page 372, section 4.2, element 1, wherein feature extraction corresponds to feature detector); and

A feature characterizer for characterizing features detected by said feature detector (page 372, section 4.2, element 2, wherein feature vector corresponds to characterization value), said feature characterizer being arranged to characterize portions of image data representative of regions of an image including features detected by said feature detector (pages 370-371, section 4.1.2 and page 372, section 4.2, element 3), wherein said feature characterizer is arranged to generate characterization data for a said region of an image such that said characterization is

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substantially unaffected by distortions of that region causing skew (page 369, section 2.2, lines 3-4, wherein rotation corresponds to skew).

Gouet does not expressly disclose that the characterization is substantially unaffected by distortion of that region causing stretch.

McGuire discloses a process of characterization that is substantially unaffected by distortions of a region causing stretch and skew (column 4, lines 47-56 wherein stretch corresponds to scale and rotation corresponds to skew).

Gouet & McGuire are combinable because they are from the same art of image analysis and more specifically image data characterization.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the process of characterization as taught McGuire in the apparatus of generating characterization data disclosed by Gouet.

The suggestion/motivation for doing so would have been that the characterization process taught by McGuire greatly improves the accuracy of characterization (column 4, lines 41-44).

Therefore, it would have been obvious to combine Gouet with McGuire to obtain the invention as specified in claim 70, 87 and 146.

As to claim 78, the combination of Gouet and McGuire discloses an apparatus in accordance with claim 70, further comprising a feature associator for identifying matches between features in pairs of images, wherein said feature associator is arranged to determine a match between features in pairs of images on the basis of characterization by said feature characterizer of features in the pair of images (Gouet, Abstract, line 8).

As to claim 79, the combination of Gouet and McGuire discloses an apparatus in accordance with claim 78, further comprising:

A data store for storing characterization data for features in a plurality of images; and

A feature associator, said feature associator being arranged to determine, utilizing the characterization of features of received image data characterized by said feature characterizer, a match between features in the receive image data and feature defined by characterization values stored in said data store (Gouet, Abstract, line 8 and section 5).

As to claim 80, the combination of Gouet and McGuire discloses an apparatus for generating data defining a three-dimensional computer model of an object comprising:

Apparatus for identifying matches between features in pairs of images in accordance with claim 78;

A viewpoint determinator for determining on the basis of the matching of features in a pair of images by said apparatus the relative viewpoints from which said images have been recorded (page 375, section 5 last paragraph before section 6, lines 1-3); and

A model generator for generating data defining a three-dimensional computer model of the object utilizing the image data in the images and the determination of the relative viewpoints from which the images have been recorded by said viewpoint determinator (page 375, section 5 last paragraph before section 6, line 6).

As to claim 96, please refer to rejections made for claim 78 above.

As to claim 97, the combination of Gouet and McGuire disclose a method in accordance with claim 96, further comprising the step of generating a signal conveying information defining the correspondences (page 372, section 4.2, paragraph 1, lines 4-5, “computes” wherein it is inherent that the computing comprises of generating a signal).

As to claim 98, the combination of Gouet and McGuire disclose a method in accordance with claim 97, further comprising the step of recording the generated signal on a recording medium either directly or indirectly (page 372, section 4.2, paragraph 1, lines 4-5, “computes” wherein the signal is inherently recording for the process to compute).

As to claim 99, please refer to rejections made for claim 80 above.

As to claims 104-106, please refer to rejections made for claims 70 and 78 above.

As to claim 142, the combination of Gouet and McGuire discloses a storage medium storing processor implementable instructions for causing a programmable processing apparatus to become operable to perform a method in accordance with at least one of claims 12, 37, or 61, 87, or 124 (page 372, section 4.2, paragraph 1, lines 4-5, “computes”).

Allowable Subject Matter

11. Claims 1-20, 69, 107-141 and 144 are allowed. Please refer to the office action mailed out on May 3, 2004 for the reasoning behind the allowance, the same reasons apply to all the independent claims allowed in this action.

12. Claims 71-77 and 88-95 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 5,991,429 to Coffin et al. discloses characterization invariant to stretch and skew.

USPN 5,101,270 to Boone et al. discloses characterization invariant to stretch and skew.

USPN 5,132,842 to Yeh discloses characterization invariant to stretch and skew.

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USPN 6,744,909 to Kostrzewski et al. discloses characterization invariant to stretch and skew.

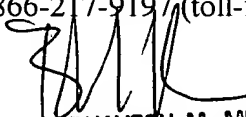
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron W Carter whose telephone number is (703) 306-4060. The examiner can normally be reached on 7am - 3:30 am (Mon. - Fri.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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